

SIP-adus Workshop 2019

A background image showing light trails from a long-exposure photograph of a road at night, with streaks of yellow, white, and blue light.

Connected Vehicle

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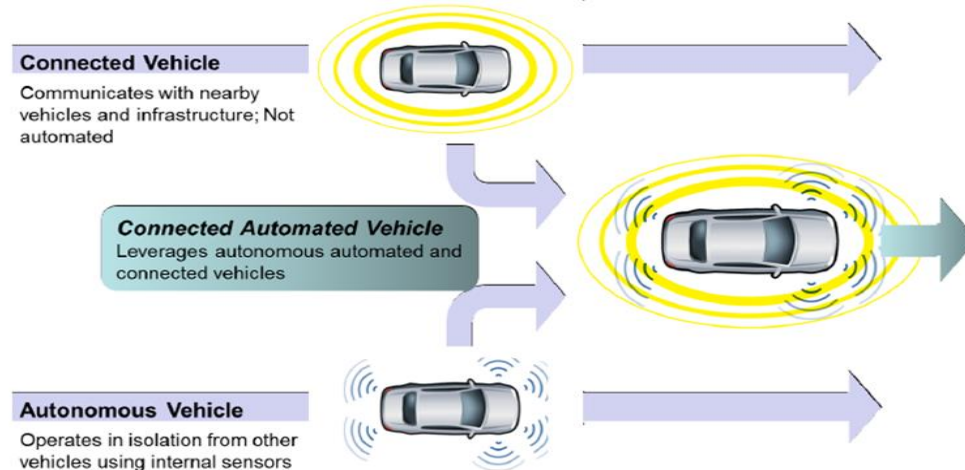
Introduction of the Cooperative Connected and Automated Driving Communication method Study Task Force (CCAD TF)

- 1. Background of TF establishment**
- 2. TF organization overview**
- 3. Aim and goal**
- 4. Study process**
- 5. Schedule**
- 6. Summary**

1. Background of TF establishment

◆ Expectations for cooperative connected and automated driving (CCAD)

In the future, adding cooperative technology to autonomous driving will become **Cooperative Connected and Automated Vehicle** as ultimate **Automated Vehicle** to realize safer and smoother society.



1. Background of TF establishment

◆ Questions to CCAD

- ◆ ITS wireless communication systems has been put into practical use in Japan. Can those systems be used in the era of CCAD?
- ✓ Is a new radio frequency required for CCAD?
- ✓ How much bandwidth is necessary?
- ✓ In the US, Europe and China, 5.9 GHz ITS frequency is used. Will Japan not became Galapagos with 760MHz and 5.8GHz ?
- ✓ Which is better, DSRC or C-V2X?

1. Background of TF establishment

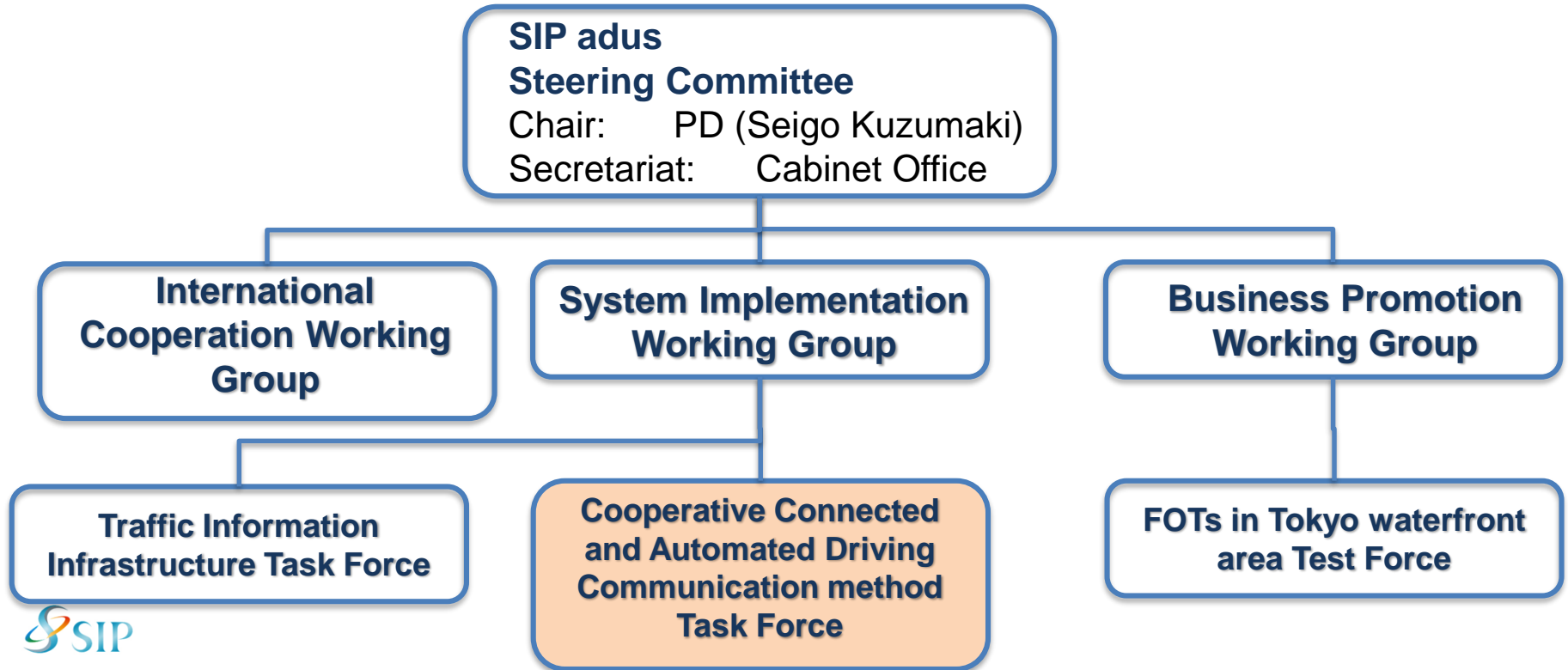
- ◆ We should calmly and logically consider the optimal communication method for CCAD without being involved in much discussions.
- ◆ Need a place to discuss how will Japan choose communication method for CCAD.



- ◆ Establish the Cooperative Connected and Automated Driving communication method study TF

2. TF organization overview

◆ Organization of CCAD TF



3. Aims and Goals

【Aims】

- ◆ Drawing an ideal CCAD with roadmap, Establishing an policy of optimal communication method as ALL JAPAN, taking into account international standards

【Goals】

- ◆ Propose the optimal communication method for CCAD
- ◆ Roadmap of communication method

4. Study process

- ◆ This study will be conducted in the following three phases.
 - **Phase I: Identifying needs**
 - **Phase II: Determination of technical requirements**
 - **Phase III: Examination of realization methods**

◆ Phase I: Identifying needs

- ① Definition of CCAD
- ② Use cases (functions / services)

◆ Phase II: Determination of technical requirements

- ③ Technical requirements (reliability / security, etc.)
for realizing the use case

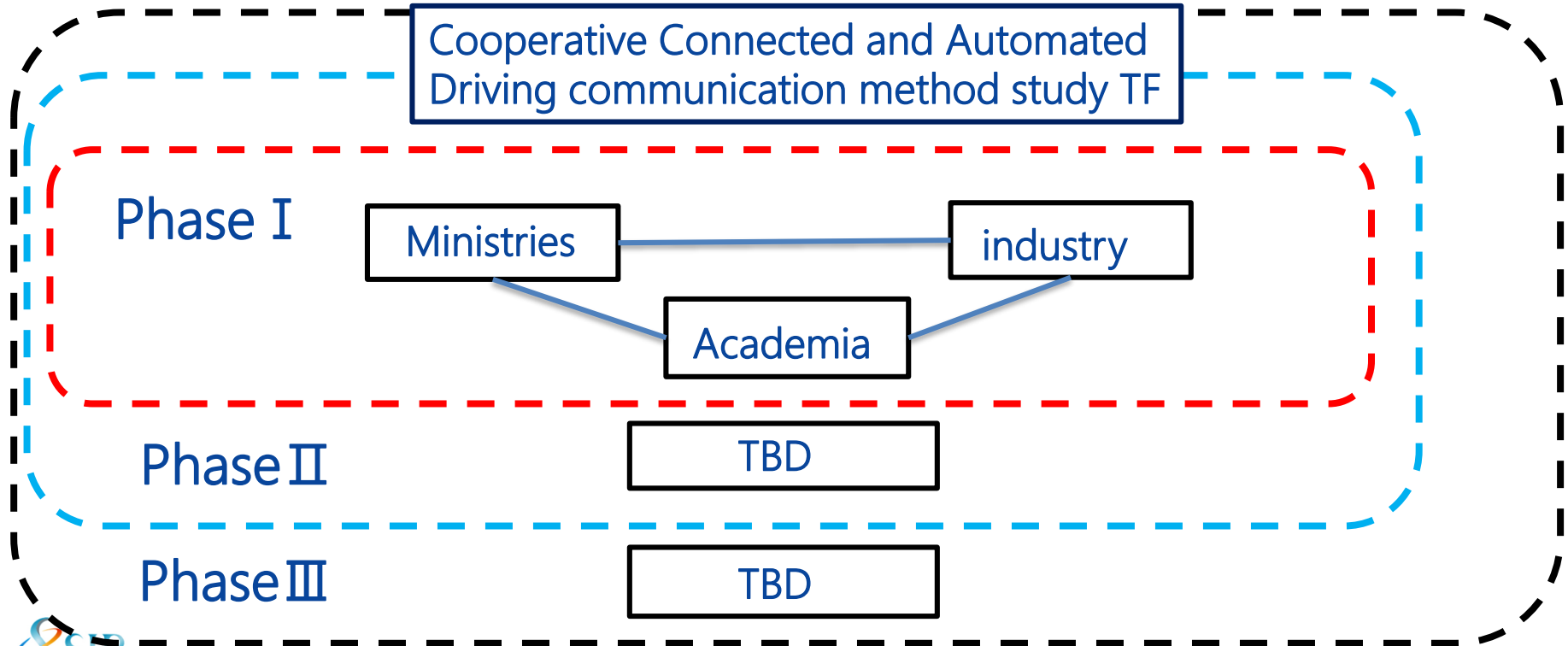
- ④ Define required Information such as message size /
communication frequency etc.

◆ Phase III: Examination of realization methods


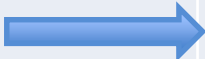
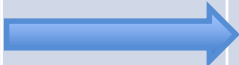
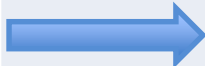




- ⑤ Technical requirements for the communication method
- ⑥ Is there any shortage of current ITS communication?
- ⑦ Investigate new communication method / frequency allocation
- ⑧ Evaluation of communication methods (infrastructure investment, user expense, etc.)

4. Study process

Study is carried out efficiently by selecting the appropriate members in each phases



5. Schedule

		2019FY	2020FY	2021FY
Phase I	①definition			
	②Use case			
Phase II	③Technical requirement			
	④Information definition			
Phase III	⑤communication technology requirements			
	⑥Current communication study			
	⑦New communication method study			
	⑧Communication system evaluation and proposal			

6. Summary

- ◆ Established the **Cooperative Connected and Automated Driving Communication method study TF** to study the optimal communication method for CCAD
- ◆ Study will be conducted in three phases in order to discuss communication method after identifying the **needs** and **technical requirements** for CCAD
- ◆ **Appropriate members** are gathered for each study phase
- ◆ The goal is to propose a **optimal communication** method for Japan and draw a roadmap for communication systems to realize future CCAD.

Thank you

